



# TVA 2008 Environmental Policy

Discussions with  
the Regional  
Resource  
Stewardship  
Council

October 9, 2008  
John W. Myers





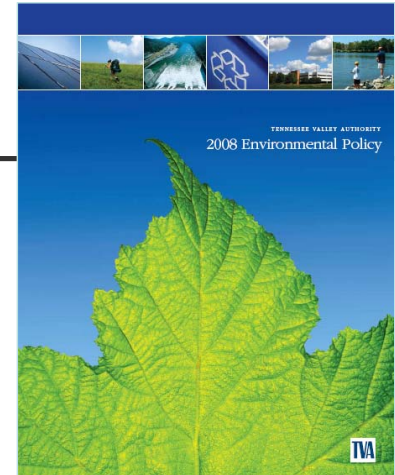
# Stakeholder Engagement and Input

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- Extensive public comments received
- 40 one-on-one interviews
- 7 town hall meetings
- 2 listening sessions on renewables & energy efficiency
- TVA Board and Executive team
- TVPPA, Distributors and Groups
- Valley Caucus members and staffs
- Federal and State agencies
- Nongovernmental organizations including FACA

*The Regional Resource Stewardship Council*

- **What We Heard**
- More emphasis on a renewable and cleaner energy portfolio
- Increase use of emissions controls and technologies
- Reduce thermal impacts and water consumption
- Reduce TVA's waste footprint
- Increase eco-friendly recreation on TVA lands
- Develop a policy for mineral rights



TVA Board approved the TVA Environmental Policy on May 19, 2008



# Environmental Principles

- Climate change mitigation
- Improvement of air quality
- Protection and improvement of water resources
- Waste minimization
- Sustainable land use
- Sound natural resource management







# Environmental Principles

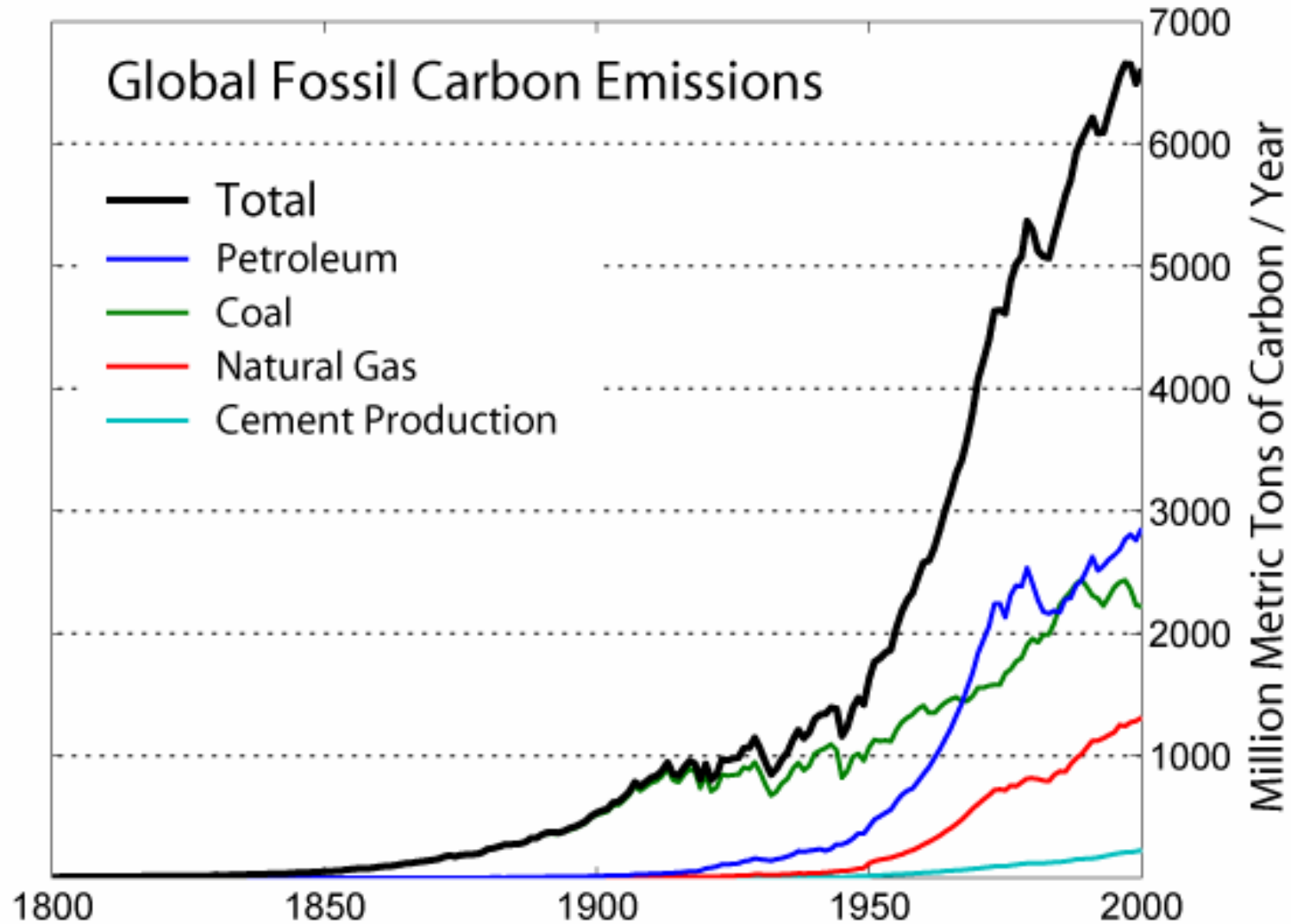
## Climate change mitigation

- **Environmental Objective**

Stop growth in volume of emissions and reduce rate of carbon emissions (intensity) by 2020

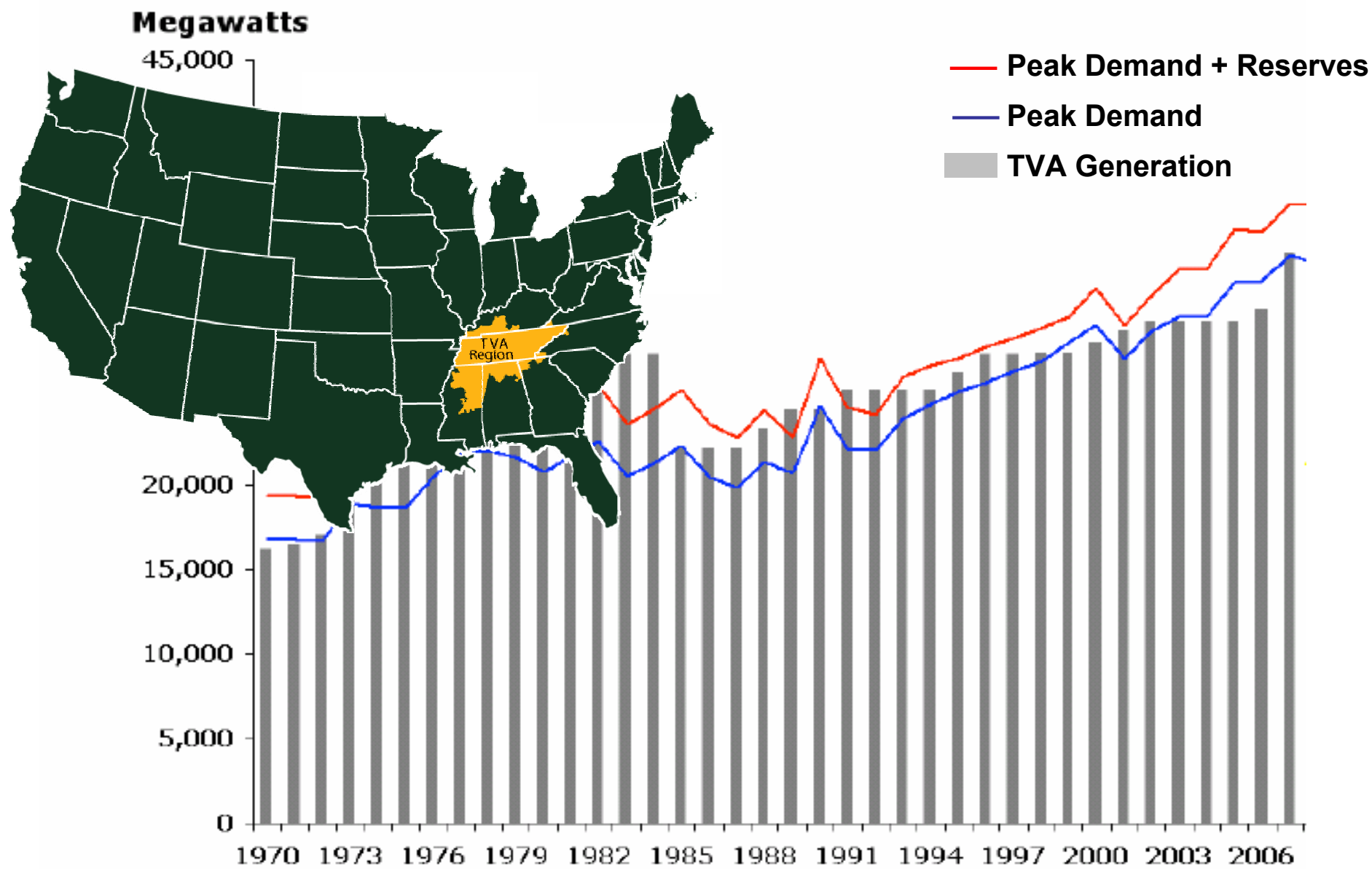


# Carbon Emissions are Growing



***“Carbon Emissions have grown 7-fold since the 1930’s”***

# Electricity Demand Continues to Grow

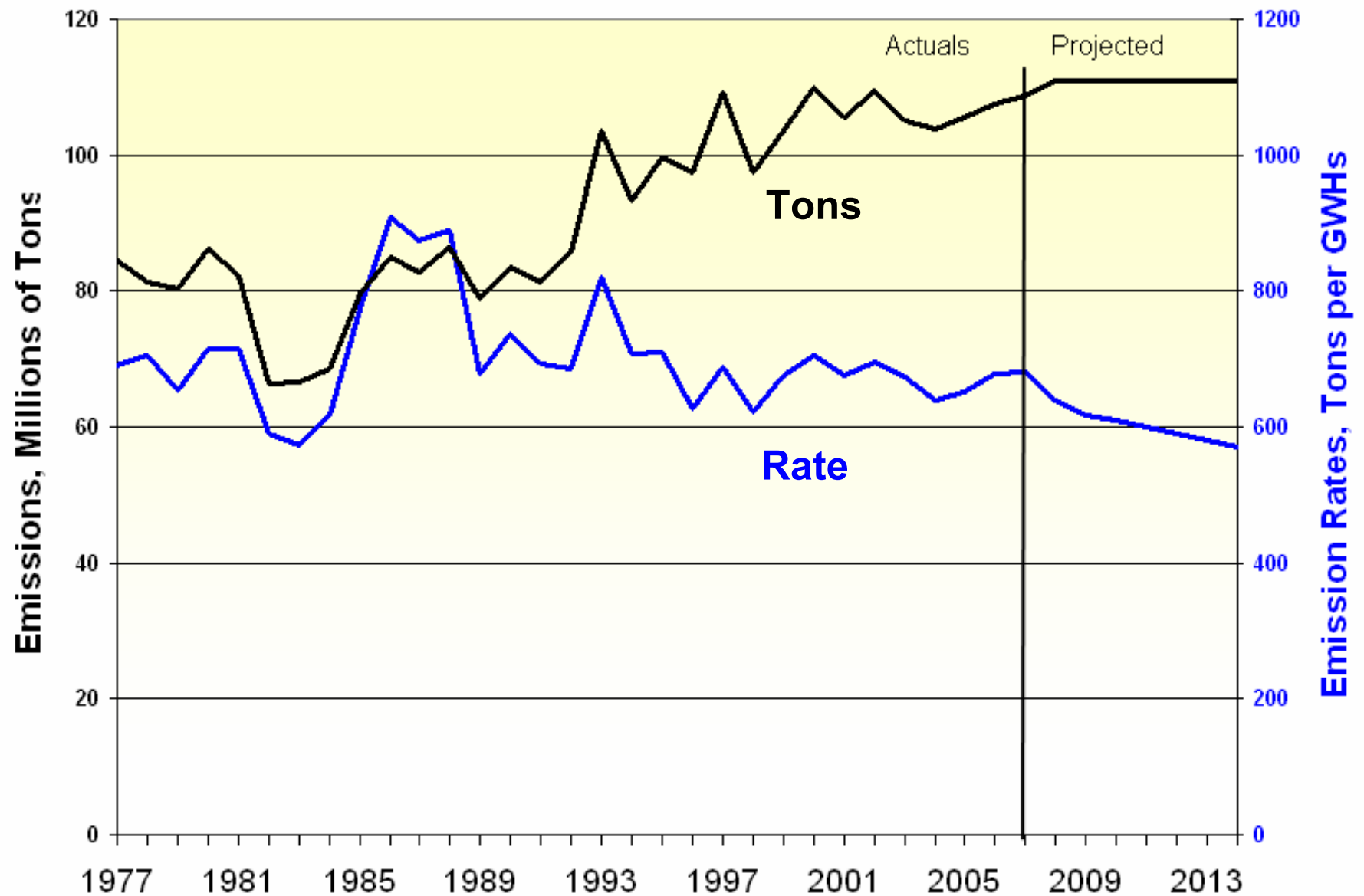


***“Peak Demand in the TVA Region Growing ~2.0%/year ”***





# TVA CO<sub>2</sub> Emission Trends





# Clean Energy

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- **Definition**

TVA's clean energy portfolio will be defined as energy that has a near-zero carbon emission rate or energy efficiency improvements

- **Examples**

Nuclear, renewables (including hydro), demand reduction, or waste heat recovery

## Definition

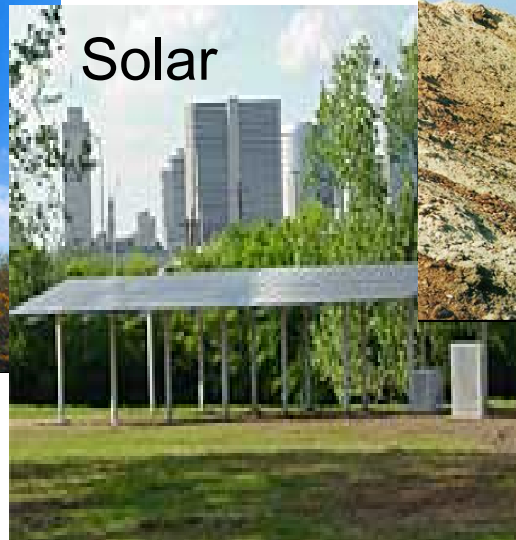
TVA's renewable energy will be defined as energy production that is sustainable and often naturally replenished



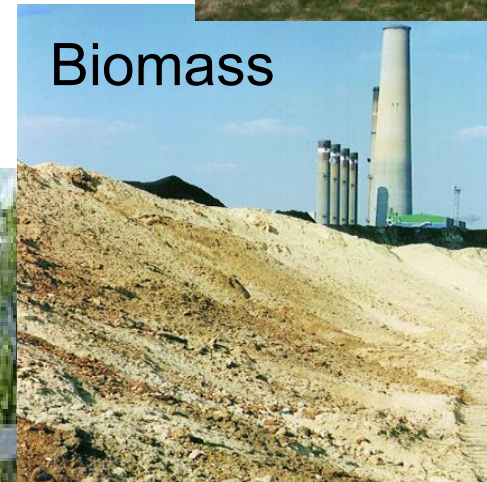
Hydroelectric



Wind



Solar

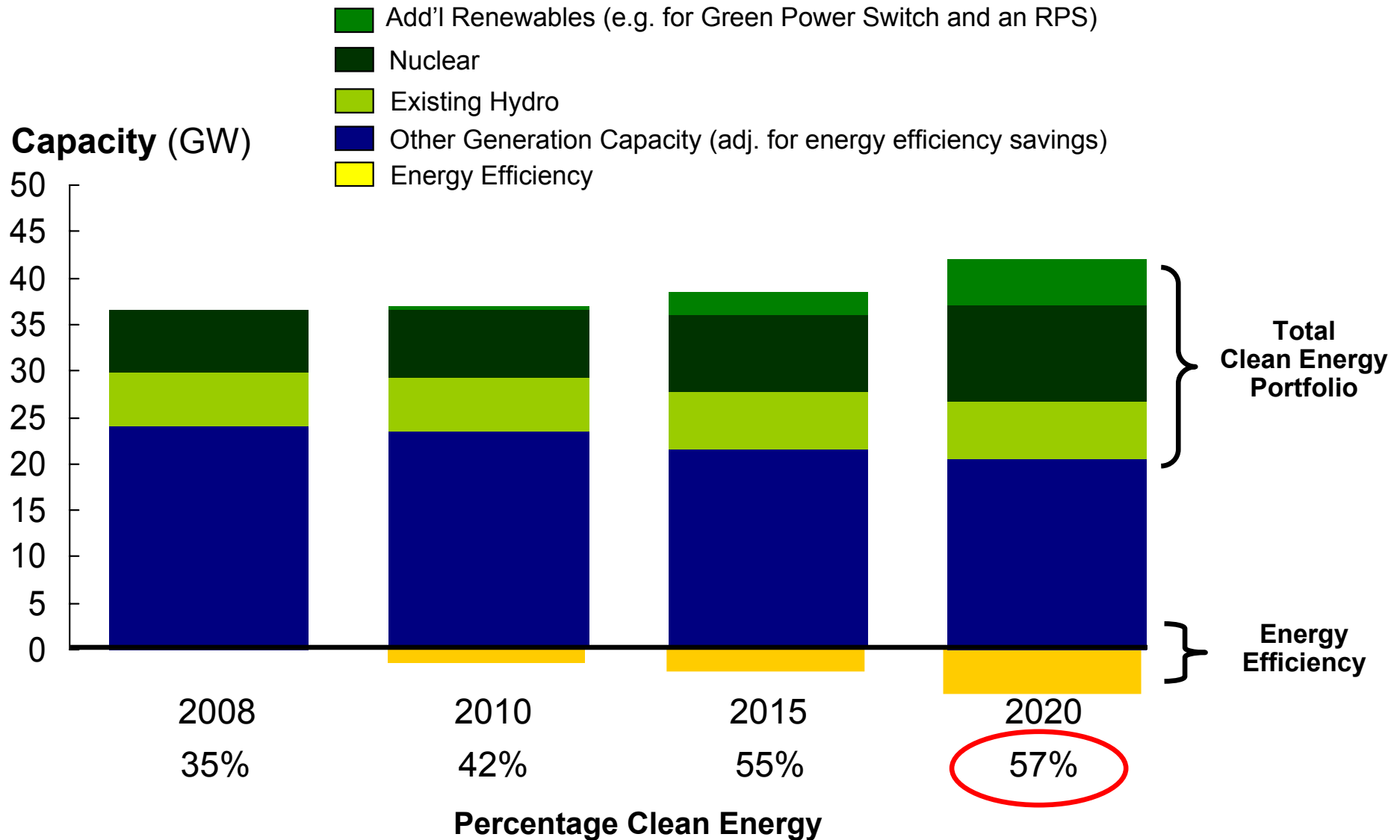


Biomass



Landfill

# Renewable and Clean Energy Portfolio



***“TVA’s Portfolio >50% Renewable and Clean Energy”***



# Environmental Principles

## Improvement of air quality

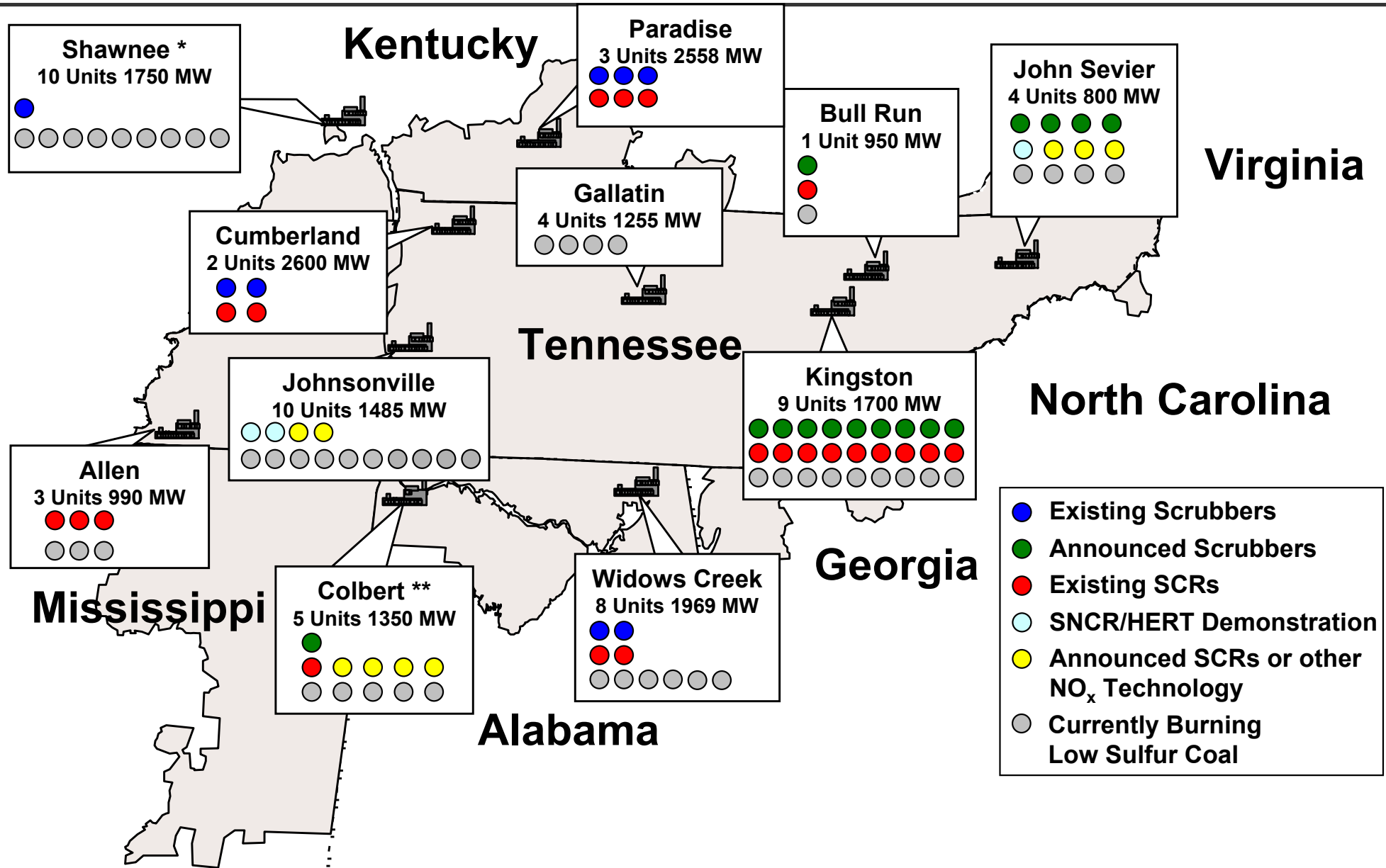
- **Environmental Objective**

Continue efforts to reduce SO<sub>2</sub>, NO<sub>x</sub>, Mercury, and Particulate Emissions





# Scrubbers and Advanced NO<sub>x</sub> Controls on TVA's Coal Fired Power Plants



\* Shawnee Unit 10 is an Atmospheric Fluidized Bed Combustion (AFBC) boiler which lowers SO<sub>2</sub> and NO<sub>x</sub> emissions without the use of external controls.

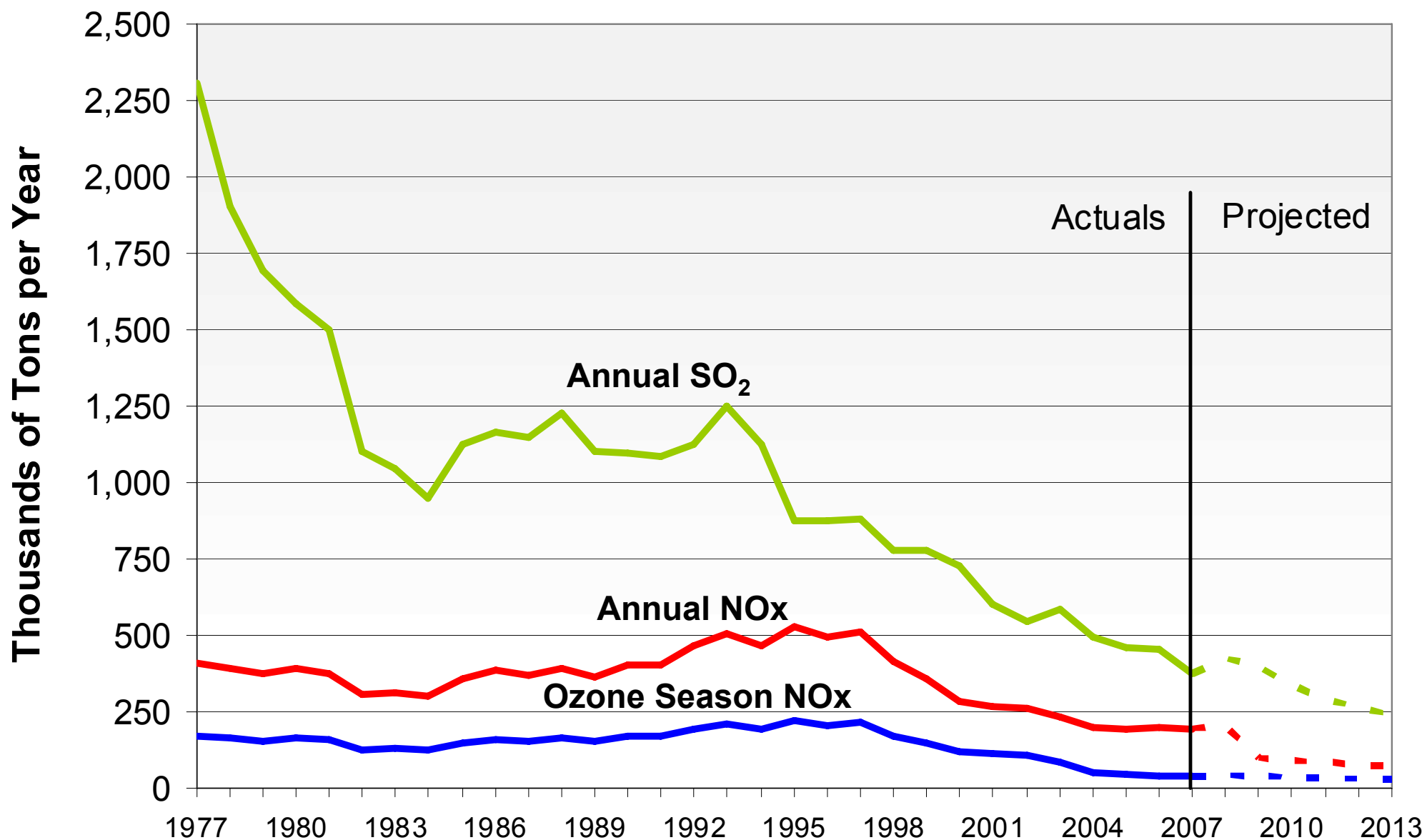
\*\* Budget for Colbert Scrubber/SCRs not approved by Board yet.

NOTE: In addition to 21 selective catalytic reduction systems, TVA has installed low NO<sub>x</sub> burners or over-fire air on 40 of the 59 coal-fired units. The other units have installed boiler optimization systems and Shawnee Unit 10 is a boiler with low NO<sub>x</sub> technology.





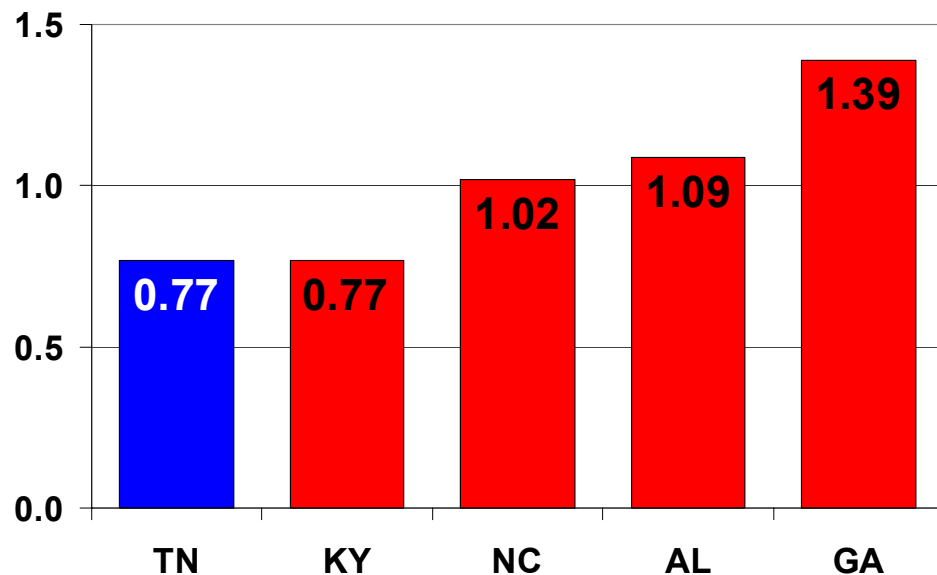
# TVA Emission Trends



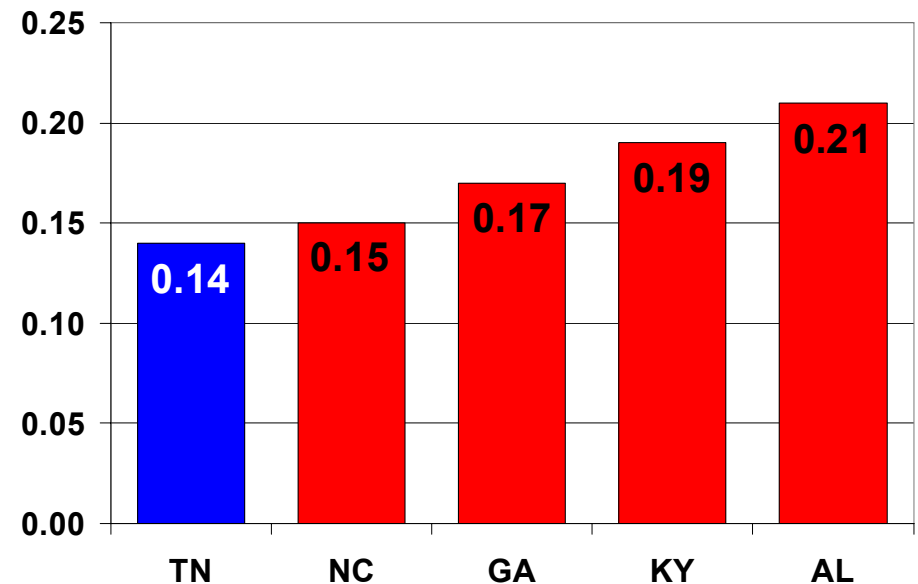
# 2007 Emission Rates Comparison

## Coal-fired Utility Emission Rates of Southeastern States

Annual SO<sub>2</sub> Emission Rates  
Pounds per mmBTU



Ozone Season NO<sub>x</sub> Emission Rates  
Pounds per mmBTU





# Environmental Principles



## Waste Minimization

- **Environmental Objective**

Drive increased sustainability in existing compliance programs and waste management programs by focusing on waste avoidance, minimizing waste generation, and increasing recycling to reduce environmental impacts



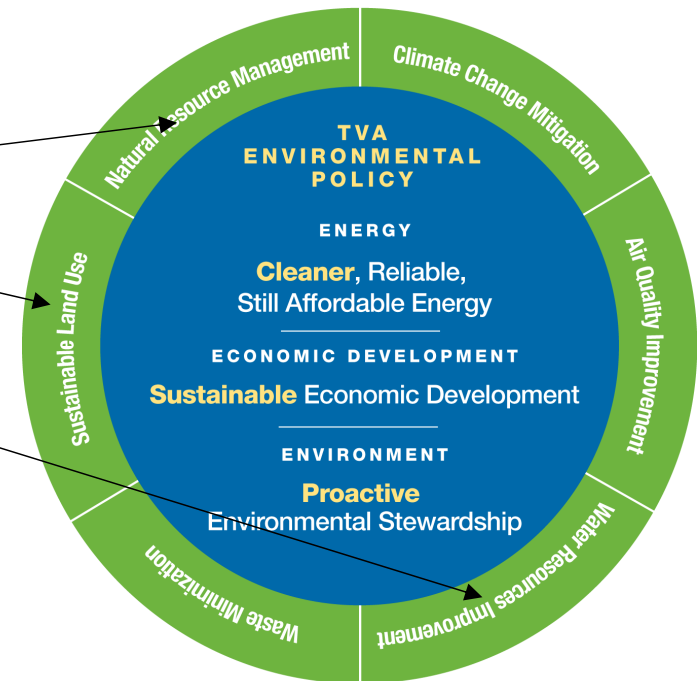
# Regional Resource Stewardship Council Advise – March 2008

Councils recommendations centered on:  
Water Quality and Quantity/Sufficiency  
Land and Shoreline Strategy  
Natural Resource Strategy  
Recreation

Themes - “Educate, Collaborate/Leverage, Execute”



**Natural Resource Management**  
**Sustainable Land Use**  
**Water Resource Protection**  
**and Improvement**





# Environmental Principles

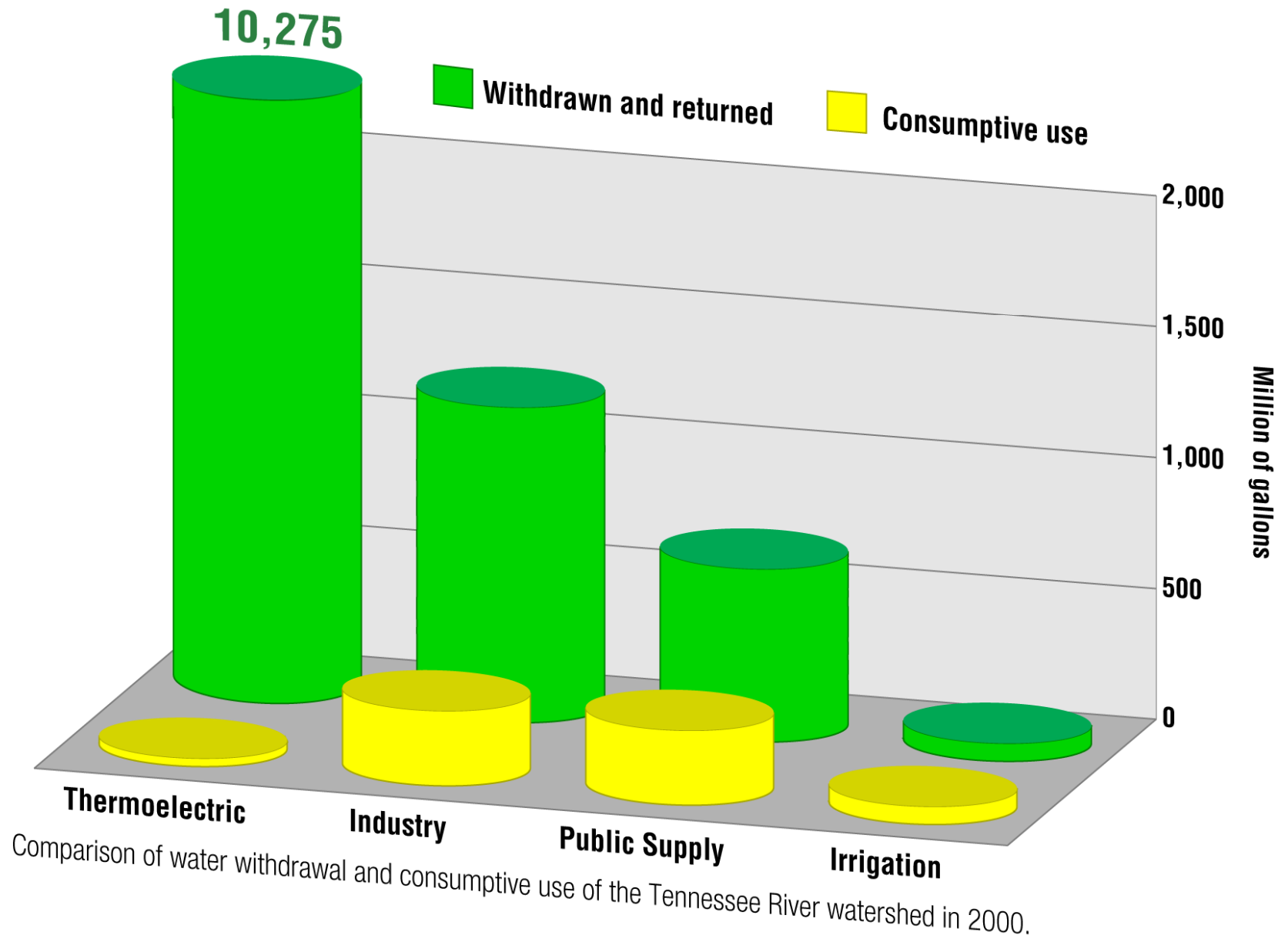
## Water Resource Protection and Improvement

- **Environmental Objective**

Continue managing an integrated river system while striving to provide clean and sufficient water



# Water Withdrawal and Consumption







# Environmental Principles

## Sustainable Land Use

- **Environmental Objective**

Maintain TVA managed lands in good environmental health by balancing uses for sustainable development.



## Shoreline stabilization project



**Before**



**After**

*“Whether the goal is to protect an archaeological site from exposure to the elements and from looting, to stabilize a heavily used recreation area that might otherwise be lost to the public, or to improve water quality and wildlife habitat, it’s a good feeling to know that we’re helping to protect locations that are important to Valley citizens.” TVA Watershed Team Member*





# Environmental Principles

## Natural Resource Management

- **Environmental Objective**

TVA will be a leader in natural resource management by implementing sustainable practices in dispersed recreation while balancing the protection of natural and cultural resources.



- Strategies being refined to match policy
- Policy Implementation and resource planning to undergo environmental review



